

## Patent claims

1. Method for securing the access to a service in a telecommunication network,  
whereby the access is secured by means of entering an unambiguous digit sequence in  
5 the terminal device, which digit sequence is only known to the user of the service,  
and this digit sequence is transparently transmitted in the communication network via  
switching nodes to a central entity and is evaluated there,  
characterized in that  
the digit sequence is supplemented by at least one further, variable parameter prior to  
10 the transmission by the communication network and  
is encoded by means of a mathematical algorithm (one-way function), and  
the result of this function calculation is transmitted to the central entity by means of  
multi-frequency dial methods and  
an authentication is carried out in the central entity.  
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2. Method according to patent claim 1,  
characterized in that  
the telecommunication network is an intelligent network.
- 20 3. Method according to patent claim 1 or 2,  
characterized in that  
a variable parameter is a time specification.
4. Method according to patent claim 1 or 2,  
25 characterized in that  
a variable parameter is a random number.
5. Method according to patent claim 1 or 2,  
characterized in that

a variable parameter taken from a sequence of numbers, starting with the whole number  $n$ , whereby the precursor  $n_2$  of a number  $n_1$  results by means of calculation [sic].

5    6. Method according to one of the previous claims,  
characterized in that  
a single-step method is utilized for the encoding, according to norm ITU X.509.

7. Method according to one of the previous patent claims,  
10    characterized in that  
a two-step encoding method is utilized, according to norm ITU X.509.

8. Method according to one of the previous patent claims,  
characterized in that  
15    an encoding method is utilized, according to RFC 1938.

9. Method according to one of the previous patent claims,  
characterized in that  
the utilized mathematical function result [sic] by means of applying hash functions.

20    10. Method according to one of the previous patent claims,  
characterized in that  
the result of the mathematical function must be encoded in a digit sequence prior to the  
transmission.

25    11. Method according to one of the previous patent claims,  
characterized in that  
the authentication is not successful when the encoded digit sequence has already been  
sent once within a fixed time interval.

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12. Method according to one of the previous patent claims,  
characterized in that

the authentication is successfully carried out when

- 5           a) the encoded digit sequence has been transmitted for the first time within  
          a fixed time interval and
- b) and [sic] the encoded digit sequence corresponds to the digit sequence  
          calculated by means of the communication service.

13. Device in a telecommunication network for utilizing services offered in this  
10 network,

with a telecommunication terminal device (KE), which makes it possible for a user, by  
means of an input device, to dial-up a service and to enter a digit sequence for the  
authentication,

15 with at least one switching node (SSP) that transparently forwards the service call and  
the digit sequence and

with a central entity (SCP) in this network, which evaluates the service call and which  
carries out an authentication of the user on the basis of the entered digit sequence,  
characterized in that

20 an encoding device (MVF) exists, with an input device for a digit sequence (PIN) and  
with a calculation device for calculating a result from the mathematical function (f) and  
the digit sequence

and

25 with an output device for transmitting the calculated result as multi-frequency dial tone  
and the authentication digit sequence is entered into this device, is encoded there and  
the result of this encoding, in the multi-frequency dial tone, is transmitted via the  
terminal device into the network and

the central entity carries out an authentication procedure before access to the dialed-up service in the intelligent network is allowed.

14. Device according to patent claim 13,

5 characterized in that

the telecommunication network is an intelligent network.

15. Device according to patent claim 13,

characterized in that

10 the telecommunication network is a network for mobile telephony.

16. Device according to patent claim 13,

characterized in that

an encoding device is a component of the telecommunication terminal device.

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